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**IN THE CLAIMS:**

1 1. - 19. (Cancelled)

1 20. (Previously Presented) A method for allocating a spare disk to replace a failed disk in  
2 a network storage system, comprising:  
3 maintaining a plurality of volumes in the network storage system, each volume  
4 associated with a set of disk storage units;  
5 maintaining a plurality of spare disks in the network storage system;  
6 attempting to determine the best spare disk by selecting those disks from the plu-  
7 rality of spare disks which meet at least one rule;  
8 replacing the failed disk with the best spare disk;  
9 in the event that no spare disk meets the at least one rule, selecting a spare disk  
10 which violates the at least one rule as a selected disk; and  
11 notifying an administrator that the selected spare disk violates the rule.

21. -27. (Cancelled)

1 28. (Previously Presented) A network storage system, comprising:  
2 means for maintaining a plurality of volumes in the network storage system, each  
3 volume associated with a set of disk storage units;  
4 means for maintaining a plurality of spare disks in the network storage system;  
5 means for attempting to determine a best spare disk by selecting those disks from  
6 the plurality of spare disks which meet at least one rule;  
7 means for replacing the failed disk with the best spare disk;  
8 in the event that no spare disk meets the at least one rule, means for selecting a  
9 spare disk which violates the at least one rule as a selected disk; and  
10 means for notifying an administrator that the selected spare disk violates the rule.

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1 29. – 33. (Cancelled)

1 34. (Previously Presented) A file server in a network storage system, comprising:  
2 a storage adapter to connect to a plurality of disk storage units in the network  
3 storage system;  
4 an operating system to maintain a plurality of volumes, each volume associated  
5 with a set of disk storage units, the set of disk storage units selected from the plurality of  
6 disk storage units;  
7 the operating system maintaining a plurality of spare disks units selected from the  
8 plurality of disk storage units;  
9 the operating system choosing a best spare disk of the plurality of spare disks to  
10 replace a failed disk, the failed disk associated with any volume of the network storage  
11 system;  
12 the operating system attempting to determine a best spare disk by selecting those  
13 disks from the plurality of spare disks which meet at least one rule;  
14 the operating system replacing the failed disk with the best spare disk;  
15 in the event that no spare disk meets the at least one rule, the operating system se-  
16 lecting a spare disk which violates the at least one rule as a selected disk: and  
17 the operating system notifying an administrator that the selected spare disk vio-  
18 lates the rule.

1 35. – 38. (Cancelled)

1 39. (Previously Presented) A method for allocating a spare disk to replace a failed disk in  
2 a network storage system, comprising:  
3 maintaining a plurality of volumes in the network storage system, each volume  
4 associated with a set of disk storage units;  
5 maintaining a plurality of spare disks in the network storage system;

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6 choosing a best spare disk of the plurality of spare disks to replace a failed disk,  
7 the failed disk associated with any volume of the network storage system, wherein the  
8 best spare disk is chosen based upon a comparison of the speed of the spare disks and the  
9 failed disk; and  
10 replacing the failed disk with the best spare disk.

1 40. — 44. (Cancelled)

1 45. (Previously Presented) A computer implemented method for allocating a spare stor-  
2 age device to replace a failed storage device in a network storage system, comprising:  
3 identifying a set of spare storage devices in the network storage system; and  
4 selecting a particular spare storage device of the set of spare storage devices to re-  
5 place the failed storage device, the particular spare storage device selected using a size  
6 policy in which preference is given to a spare storage device with minimum storage space  
7 in excess of the storage space of the failed disk.

1 46. (Previously Presented) A computer implemented method for allocating a spare stor-  
2 age device to replace a failed storage device in a network storage system, comprising:  
3 identifying a set of spare storage devices in the network storage system; and  
4 selecting a best spare storage device of the set of spare storage devices to replace  
5 the failed storage device, the best spare storage device selected using a speed policy in  
6 which preference is given to a spare storage device with a speed closest to that of the  
7 failed disk.

1 47. (Previously Presented) The method of claim 46 wherein the speed is a rotation  
2 speed.

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1 48. (Previously Presented) The method of claim 46 wherein the speed is a data read  
2 speed.

1 49. (Previously Presented) The method of claim 46 wherein the speed is a data write  
2 speed.

50. (Cancelled)

1 51. (Previously Presented) A computer readable medium comprising executable pro-  
2 gram instructions for allocating a spare storage device to replace a failed storage device  
3 in a network storage system, the executable program instructions adapted for:  
4 identifying a set of spare storage devices in the network storage system; and  
5 selecting a particular spare storage device of the set of spare storage devices to re-  
6 place the failed storage device, the particular spare storage device selected using a size  
7 policy in which preference is given to a spare storage device with minimum storage space  
8 in excess of the storage space of the failed disk.

1 52. (Previously Presented) A computer readable medium comprising executable pro-  
2 gram instructions for allocating a spare storage device to replace a failed storage device  
3 in a network storage system, the executable program instructions adapted for:  
4 identifying a set of spare storage devices in the network storage system; and  
5 selecting a best spare storage device of the set of spare storage devices to replace  
6 the failed storage device, the best spare storage device selected using a speed policy in  
7 which preference is given to a spare storage device with a speed closest to that of the  
8 failed disk.

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## BEST AVAILABLE COPY

1 Please add new claims 53 *et al.*

1 53. (New) The method of claim 20, wherein the best spare disk is a highest-ranked disk.

1 54. (New) The method of claim 53, wherein the highest-ranked disk is determined by  
2 meeting one or more rules.

1 55. (New) The method of claim 54, wherein the one or more rules are hard-coded and  
2 designed to ensure data integrity by providing redundancies within data transfer path.

1 56. (New) The method of claim 20, wherein the best spare disk is randomly selected from  
2 a plurality of highest ranked disks.

1 57. (New) The method of claim 20, wherein the at least one rule is hard-coded and de-  
2 signed to ensure data integrity by providing redundancies within data transfer path..

1 58. (New) The network storage system of claim 28, wherein the best spare disk is a high-  
2 est-ranked disk.

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1 59. (New) The network storage system of claim 58, wherein the highest-ranked disk is  
2 determined by meeting one or more rules.

1 60. (New) The network storage system of claim 59, wherein the one or more rules are  
2 hard-coded and designed to ensure data integrity by providing redundancies within data  
3 transfer path.

1 61. (New) The network storage system of claim 28, wherein the best spare disk is ran-  
2 domly selected from a plurality of highest ranked disks.

1 62. (New) The network storage system of claim 28, wherein the at least one rule is hard-  
2 coded and designed to ensure data integrity by providing redundancies within data trans-  
3 fer path.

1 63. (New) The file server of claim 34, wherein the best spare disk is a highest-ranked  
2 disk.

1 64. (New) The file server of claim 63, wherein the highest-ranked disk is determined by  
2 meeting one or more rules.

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1 65. (New) The file server of claim 64, wherein the one or more rules are hard-coded and  
2 designed to ensure data integrity by providing redundancies within data transfer path.

1 66. (New) The file server of claim 34, wherein the best spare disk is randomly selected  
2 from a plurality of highest ranked disks.

1 67. (New) The file server of claim 34, wherein the at least one rule is hard-coded and de-  
2 signed to ensure data integrity by providing redundancies within data transfer path.

1 68. (New) The method of claim 39, wherein the best spare disk is a highest-ranked disk.

1 69. (New) The method of claim 39, wherein the best spare disk is randomly selected from  
2 a plurality of highest ranked disks.